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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,181	03/12/2004	Michael J. Pellin	0003/01288	8160

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EXAMINER	
TALBOT, BRIAN K	

ART UNIT	PAPER NUMBER
1792	

MAIL DATE	DELIVERY MODE
05/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/799,181	PELLIN ET AL.	
	Examiner	Art Unit	
	Brian K. Talbot	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *16-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The amendment filed 2/8/08 has been considered and entered. Claims 21-26 have been added. Claims 1-26 remain in the application.

2. This application contains claims 16-20 drawn to an invention nonelected with traverse in the reply filed on 9/24/07. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

3. In light of the response filed 2/8/08, the 35 USC 112 first and second paragraph rejections have been withdrawn, however, the following have been necessitated by the amendment.

Claim Rejections - 35 USC § 112

4. Regarding claim 4, the term "layers" lacks antecedent basis. The claims recite "monolayers".

Claim Rejections - 35 U.S.C. 132(a) New Matter

5. The amendment filed 2/8/08 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The phrase "maintaining an uninterrupted inert gas fluid stream though the chamber" and "continuous pressure" are not supported by the specification. There is no support that the pulse inert gas is not "uninterrupted" but could be pulsed as a purge gas between precursor gases.

It is noted that the term "immediately" is recited, however, this does not limit the claims as being "uninterrupted".

Applicant is required to cancel the new matter in the reply to this Office Action.

6. Claims 1-15 and 21-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See above.

7. In light of the amendment filed 2/8/08, the 35 USC 102 rejections have been withdrawn, however, the following rejections have been necessitated by the amendment.

Claim Rejections - 35 USC § 103

8. Claims 1,3-8,10-13,15 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of the art (specification, pgs. 1-5) in combination with either Nguyen et al. (7,222,636) or Park (6,579,372).

Applicant's admitted state of the art (specification, pgs. 1-5) teaches forming HTS layers by ALD whereby one monolayer is formed and a second monolayer is formed and the two monolayers react to form the desired final layer. Pulses of carrier gas are introduced between the pulses of monolayer gases. Up to three precursor gases can be utilized. YBCO-Ca doped HTS can be formed and the deposition is self-limiting.

Applicant's admitted state of the art (specification, pgs. 1-5) fails to teach the "uninterrupted flow of inert gas".

Nguyen et al. (7,222,636) (col. 1, lines 54-67) or Park (6,579,372) (claim 1) both teach ALD processes whereby a continuous flow of purge/inert gas is supplied to the deposition chamber.

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Applicant's admitted state of the art (specification, pgs. 1-5) to utilize a continuous purge/inert gas as evidenced by either Nguyen et al. (7,222,636) or Park (6,579,372) with the expectation of achieving similar success.

Regarding claim 21, the claim recites YBCO materials. It is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of similar success regardless of the material precursors utilized. In addition, it is the Examiner's position the layer produced is a matter of design choice of one practicing in the art and therefore would have been an obvious modification of the prior art absent a showing of unexpected results.

Regarding claims 22-25, the claims recite using hydroxyl moieties to aid in the ALD process. It is the Examiner's position that the use of hydroxyl moieties in ALD process is commonplace in the art to enhance the deposition of the precursor gases to the substrate.

9. Claims 1-5,7-9,11,13-15 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niinisto et al. (6,858,546) in combination with either Nguyen et al. (7,222,636) or Park (6,579,372).

Niinisto et al. (6,858,546) teaches a method of depositing rare earth oxide thin films by and ALD process. Suitable deposition temperatures for yttrium oxide are between 200-400°C (abstract). Niinisto et al. (6,858,546) teaches alternating pulses into a reactor space. The excess source gas is purged away with an inert gas between different sources of chemical pulses. The pulses or source gas are pulsed sequentially (col. 3, lines 9-30 and col. 8, lines 20-53). The pulse length is 0.7 seconds and the growth film rate is 1.2A/cycle (see example 1).

Niinisto et al. (6,858,546) fails to teach the "uninterrupted flow of inert gas".

Features described above concerning Nguyen et al. (7,222,636) or Park (6,579,372) are incorporated here.

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Niinisto et al. (6,858,546) process to utilize a continuous purge/inert gas as evidenced by either Nguyen et al. (7,222,636) or Park (6,579,372) with the expectation of achieving similar success.

Regarding claim 21, the claim recites YBCO materials. It is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable

expectation of similar success regardless of the material precursors utilized. In addition, it is the Examiner's position the layer produced is a matter of design choice of one practicing in the art and therefore would have been an obvious modification of the prior art absent a showing of unexpected results.

Regarding claims 22-25, the claims recite using hydroxyl moieties to aid in the ALD process. It is the Examiner's position that the use of hydroxyl moieties in ALD process is commonplace in the art to enhance the deposition of the precursor gases to the substrate.

10. Claims 1-6,8 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suntola et al. (4,058,430) in combination with either Nguyen et al. (7,222,636) or Park (6,579,372).

Suntola et al. (4,058,430) teaches a method of producing compound thin films. Subjecting the substrate to vapor of a first single element which can react with the surface to form a single atomic layer and subjecting the single atomic layer to a second single element which can react with the first atomic layer to form a thin film. This procedure can be repeated to form a desired thickness (abstract). The process is self-balanced, i.e. self-limiting (col. 5, lines 65-68 and col. 6, lines 50-55). The temperature of the substrate (process) can be 300°C (examples 1-3). Three sources can be utilized (col. 11, lines 15-27).

Suntola et al. (4,058,430) fails to teach the "uninterrupted flow of inert gas".

Features described above concerning Nguyen et al. (7,222,636) or Park (6,579,372) are incorporated here.

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Suntola et al. (4,058,430) process to utilize a continuous purge/inert gas as evidenced by either Nguyen et al. (7,222,636) or Park (6,579,372) with the expectation of achieving similar success.

Regarding claim 21, the claim recites YBCO materials. It is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of similar success regardless of the material precursors utilized. In addition, it is the Examiner's position the layer produced is a matter of design choice of one practicing in the art and therefore would have been an obvious modification of the prior art absent a showing of unexpected results.

Regarding claims 22-25, the claims recite using hydroxyl moieties to aid in the ALD process. It is the Examiner's position that the use of hydroxyl moieties in ALD process is commonplace in the art to enhance the deposition of the precursor gases to the substrate.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian K Talbot/
Primary Examiner
Art Unit 1792

BKT